

Remarks

Claims 1-28 remain in this application. Claim 1 is hereby amended. No new matter is being added.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show transistors, relays and circuit breakers as claimed in claims 13-15. Applicants respectfully traverse this objection.

Applicants respectfully submit that FIG. 1 clearly depicts the transistors, relays and circuit breakers as claimed in claims 13-15 as switches 106. For convenience of reference, FIG. 1 is reproduced below.

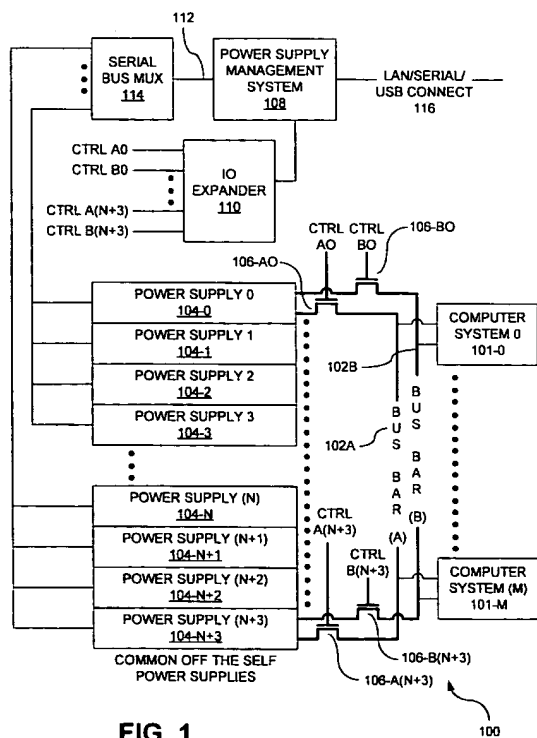


FIG. 1

As seen above, FIG. 1 clearly shows two series of switches **106-A0, ..., 106-A(N+3)** and **106-B0, ..., 106-B(N+3)**. Applicants respectfully submit that the above drawing showing these switches (which may be, for example, transistors, relays or

circuit breakers per claims 13-15) is **sufficient “for a proper understanding of the disclosed invention” as required by MPEP 608.02(d).**

Therefore, applicants respectfully submit that this objection is now overcome. If the Examiner maintains this objection, applicants respectfully requests an explanation of why illustrations of transistors, relays or circuit breakers are essential for a proper understanding of the disclosed invention.

Claim Objections

Claim 1 is objected to for a grammatical error. Applicants thank the Examiner for finding and pointing out this error. Claim 1 is currently amended to make the correction recommended by the Examiner (changing “is” to –are--). Hence, applicants respectfully submit that this objection is now overcome.

Claim Rejections—35 USC 102

Original claims 1-4, 8-9, 13, 16-17, 20 and 28 were rejected under 35 USC 102(b) as being anticipated by Wright et al (US 5,774,736). This rejection is respectfully traversed in relation to the claims as they are now amended.

Claims 1-4, 8-9, 13, 16-17

Amended claim 1 recites as follows.

1. An apparatus for supplying power to a set of servers or computer systems, the apparatus comprising:
a **chassis** for each said computer system;
at least one power supplying bus bar to which power inputs of the computer systems are connected, said at least one bus bar being **external** to said computer system chassis;
a plurality of power supplies which are **external** to said computer system chassis;

a plurality of power switches, each power switch configured **between** one of said power supplies and said at least one bus bar, for selectively connecting the power supplies to said at least one bus bar; and a power supply management controller configured to control the power switches such that the power is supplied redundantly to the computer systems.

(Emphasis added.)

As seen above, claim 1 now expressly recites “a **chassis** for each said computer system” (emphasis added). Claim 1 further expressly recites “said at least one bus bar being **external** to said computer system chassis” (emphasis added) and “a plurality of power supplies which are **external** to said computer system chassis” (emphasis added).

The express recitation of “a chassis for each of the computer systems” is added to more clearly indicate the applicants’ intent that the computer systems in the “set of servers or computer systems” include more than merely a CPU. Rather, the computer systems also include memory, input/output, operating system software, and so forth, as is known to one of ordinary skill in the art.

The added claim language of “a chassis for each said computer system” is supported in the specification. For example, page 1, lines 17-18 recites, “One conventional solution requires a power supply to be inside of **the computer system chassis**.” (Emphasis added.) That the bus bar(s) and power supplies are external to said computer system chassis is shown in FIG. 1 of the original application.

In addition, amended claim 1 also recites “a plurality of power switches, each power switch configured **between** one of said power supplies and said at least one bus bar, for selectively connecting the power supplies to said at least one bus bar”.

Applicants respectfully submit that the amended claim 1 is clearly distinguished from Wright et al. for at least the following reasons.

First, each CPU **200** in Fig. 2 of Wright et al is not a computer system housed in a **chassis**. Rather, the CPUs **200** are merely individual microprocessor chips on a card **100**.

Second, the switch circuits **204** of Wright et al are not **external** to said computer system chassis. Instead, the switch circuits **204** are on the CPU cards **101**.

Third, the power planes **208** of Wright et al are not **external** to said computer system chassis. Instead, the power planes **208** are on the CPU cards **101**.

Fourth, the switch circuits **204** in Fig. 2 of Wright et al is not “configured **between** one of said power supplies and said at least one bus bar” (emphasis added). This is shown in Fig. 2 of Wright et al, which is reproduced below for convenience of reference.

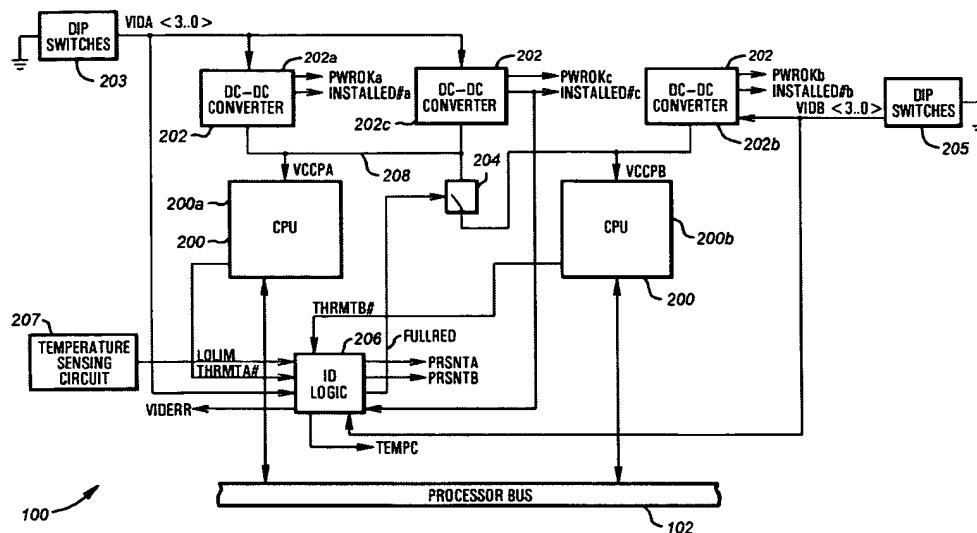


FIG. 2

As shown above, there is a **direct (unswitched)** connection between each of the DC-DC converters **202a** and **202c** and the power plane **208**. Hence, the switch circuit **204** is not in **between** a DC-DC converter and the power plane.

For at least the above reasons, applicants respectfully submit that amended claim 1 is now patentably distinguished over Wright et al.

Claims 2-4, 8-9, and 16-17 depend from claim 1. Therefore, claims 2-4, 8-9, and 16-17 are also patentably distinguished over Wright et al for at least the reasons discussed above in relation to claim 1.

Claims 20 and 28

Original claim 20 recites, among other limitations, “**switching at least one power supply to supply power via one of the bus bars** if the re-allocation is determined to be needed.” (Emphasis added.) Similarly, original claim 28 recites, among other limitations, “means for **switching at least one power supply to supply power via one of the bus bars** if the re-allocation is determined to be needed.” (Emphasis added.)

In contrast, as discussed above, there is a **direct (unswitched)** connection between each of the DC-DC converters **202a** and **202c** and the power plane **208** in Wright et al. In other words, there is no switch between the DC-DC converters **202a** and **202c** and the power plane **208**.

For at least this reason, applicants respectfully submit that original claims 20 and 28 are patentably distinguished over Wright et al.

Claim Rejections—35 USC 103 (Butka et al)

Claims 1, 2, 4-5 and 16-19

Original claims 1, 2, 4-5, 16-21, 26 and 28 were rejected under 35 USC 103(a) as being unpatentable over Butka et al (US 6,735,704). This rejection is respectfully traversed in relation to the claims as they are now amended.

Claim 1 recites, among other limitations, “a plurality of power switches, each power switch configured **between** one of said power supplies and said at least one bus bar, for selectively connecting the power supplies to said at least one bus bar”.

In contrast, there is a **direct (unswitched)** connection between each of the of the Power Supplies **16A, 16B, ..., 16N** and the power bus **12** in Butka et al. In other words, there is no switch between the power supplies and the power bus in Butka et al.

For at least this reason, applicants respectfully submit that claim 1 is patentably distinguished over Butka et al.

Claims 2, 4-5, and 16-19 depend from claim 1. Therefore, claims 2, 4-5 and 16-19 are also patentably distinguished over Butka et al for at least the reasons discussed above in relation to claim 1.

Claims 20-21, 26 and 28

Original claim 20 recites, among other limitations, “**switching at least one power supply to supply power via one of the bus bars** if the re-allocation is determined to be needed.” (Emphasis added.) Similarly, original claim 28 recites, among other limitations, “means for **switching at least one power supply to supply power via one of the bus bars** if the re-allocation is determined to be needed.” (Emphasis added.)

In contrast, as discussed above, there is a **direct (unswitched)** connection between each of the of the Power Supplies **16A, 16B, ..., 16N** and the power bus **12** in Butka et al. In other words, there is no switch between the power supplies and the power bus in Butka et al.

For at least this reason, applicants respectfully submit that original claims 20 and 28 are patentably distinguished over Butka et al.

Claims 21 and 26 depend from claim 20. Therefore, claims 21 and 26 are also patentably distinguished over Butka et al for at least the reasons discussed above in relation to claim 20.

Claim Rejections—35 USC 103 (Butka et al in view of Wagner et al)

Claim 22

Original claim 22 was rejected under 35 USC 103(a) as being unpatentable over Butka et al (US 6,735,704) in view of Wagner et al (US 6,055,163). This rejection is respectfully traversed in relation to the claims as they are now amended.

Claim 22 depends from claim 20. Hence, claim 22 is also patentably distinguished over Butka et al for at least the reasons discussed above in relation to claim 20. Wagner et al is cited in relation to round robin type scheduling and does not cure the deficiency in the disclosure of Butka et al.

Therefore, applicants respectfully submit that claim 22 is patentably distinguished over Butka et al in view of Wagner et al.

Claim Rejections—35 USC 103 (Butka et al in view of Saadeh et al)

Claims 24-25

Original claims 24-25 were rejected under 35 USC 103(a) as being unpatentable over Butka et al (US 6,735,704) in view of Saadeh et al (US 5,283,905). This rejection is respectfully traversed in relation to the claims as they are now amended.

Claims 24-25 depend from claim 20. Hence, claims 24-25 are also patentably distinguished over Butka et al for at least the reasons discussed above in relation to claim 20. Saadeh et al is cited in relation to predictive failure type analysis and does not cure the deficiency in the disclosure of Butka et al.

Therefore, applicants respectfully submit that claims 24-25 are patentably distinguished over Butka et al in view of Saadeh et al.

Claim Rejections—35 USC 103 (Butka et al in view of Kawanishi et al)

Claim 27

Original claim 27 was rejected under 35 USC 103(a) as being unpatentable over Butka et al (US 6,735,704) in view of Kawanishi et al (US 7,058,480). This rejection is respectfully traversed in relation to the claims as they are now amended.

Claim 27 depends from claim 20. Hence, claim 27 is also patentably distinguished over Butka et al for at least the reasons discussed above in relation to claim 20. Kawanishi et al is cited in relation to prioritization factors and does not cure the deficiency in the disclosure of Butka et al.

Therefore, applicants respectfully submit that claim 27 is patentably distinguished over Butka et al in view of Kawanishi et al.

Claim Rejections—35 USC 103 (Wright et al in view of Butka et al)

Claims 5-7, 13-15, and 23

Original claim 5-7, 13-15 and 23 were rejected under 35 USC 103(a) as being unpatentable over Wright et al as applied to claims 4 and 20 above and further in view of Butka et al. This rejection is respectfully traversed in relation to the claims as they are now amended.

Claims 5-7 and 13-15 depend from claim 1. Hence, claims 5-7 and 13-15 are patentably distinguished over Wright et al for at least the reasons discussed above in

relation to claim 1. In addition, claims 5-7 and 13-15 are patentably distinguished over Butka et al for at least the reasons discussed above in relation to claim 1.

Therefore, applicants respectfully submit that claims 5-7 and 13-15 are patentably distinguished over Wright et al in view of Butka et al.

Claim 23 depends from claim 20. Hence, claim 23 is patentably distinguished over Wright et al for at least the reasons discussed above in relation to claim 20. In addition, claim 23 is patentably distinguished over Butka et al for at least the reasons discussed above in relation to claim 20.

Therefore, applicants respectfully submit that claim 23 is patentably distinguished over Wright et al in view of Butka et al.

Claim Rejections—35 USC 103 (Wright et al in view of Koch et al)

Claim 10

Original claim 10 was rejected under 35 USC 103(a) as being unpatentable over Wright et al in view of Koch et al (US 6,153,946). This rejection is respectfully traversed in relation to the claims as they are now amended.

Claim 10 depends from claim 1. Hence, claim 10 is also patentably distinguished over Wright et al for at least the reasons discussed above in relation to claim 1. Koch et al is cited in relation to a rack and does not cure the deficiency in the disclosure of Wright et al.

Therefore, applicants respectfully submit that claim 10 is patentably distinguished over Wright et al in view of Koch et al.

Claim Rejections—35 USC 103 (Wright et al in view of Raynham al)

Claims 11-12

Original claims 11-12 were rejected under 35 USC 103(a) as being unpatentable over Wright et al in view of Raynham et al (US 5,747,889). This rejection is respectfully traversed in relation to the claims as they are now amended.

Claims 11-12 depend from claim 1. Hence, claims 11-12 are also patentably distinguished over Wright et al for at least the reasons discussed above in relation to claim 1. Raynham et al is cited in relation to a cooling system and does not cure the deficiency in the disclosure of Wright et al.

Therefore, applicants respectfully submit that claims 11-12 are patentably distinguished over Wright et al in view of Raynham et al.

Conclusion

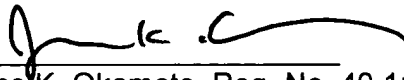
For the above-discussed reasons, applicant respectfully submits that the objections and rejections of the office action are now overcome. Favorable action is respectfully requested.

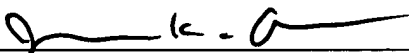
The Examiner is also invited to call the below-referenced attorney to discuss this case.

Respectfully Submitted,

Sachin Navin Chheda et al.

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